

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number
WO 2005/053371 A1

(51) International Patent Classification⁷: **H05K 7/20**

JANG, Sung-Wook [KR/KR]; 2/3, 241-1 Sangsu-dong,
Mapo-gu, Seoul 121-828 (KR).

(21) International Application Number:
PCT/KR2004/003042

(74) Agents: **LEE, Sang-Yong** et al.; 4F., Byukcheon Bldg.,
1597-5, Seocho-dong Seocho-gu, Seoul 137-876 (KR).

(22) International Filing Date:
24 November 2004 (24.11.2004)

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10-2003-0085182 27 November 2003 (27.11.2003) KR
10-2004-0022676 1 April 2004 (01.04.2004) KR

(71) Applicant (*for all designated States except US*): **LS CA-
BLE LTD.** [KR/KR]; 19-20F ASEM Tower 159 Samsung-
dong, Gangnam-gu, Seoul 135-090 (KR).

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

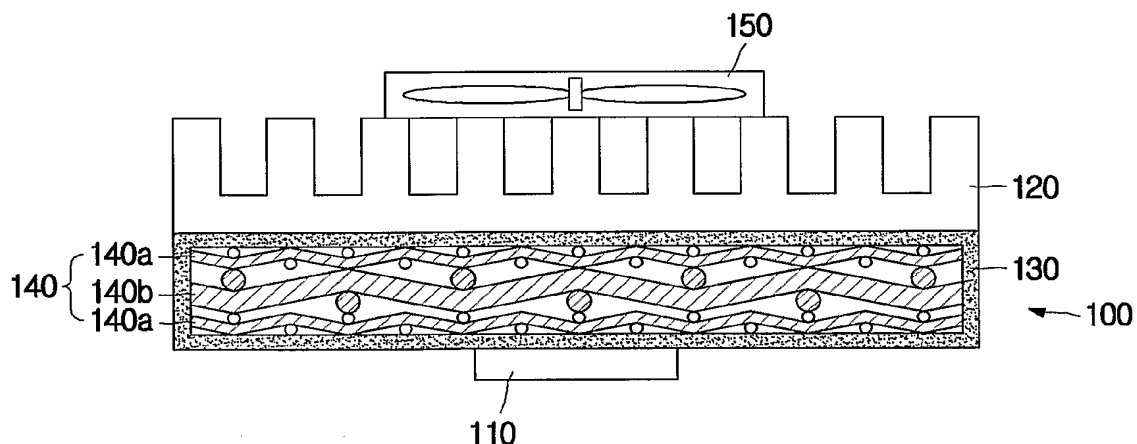
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **LEE, Yong-Duck**
[KR/KR]; 109-2001 Moraksan Hyundai Apt., Ojeon-dong,
Euiwang-si, Gyeonggi-do 437-070 (KR). **OH, Min-Jung**
[KR/KR]; 112-301 Samsung Raemian Apt., Anyang
1-dong, Manan-gu, Anyang-si, Gyeonggi-do 430-710
(KR). **KIM, Hyun-Tae** [KR/KR]; 102, 104-120 Dan-
gsan-dong 6-ga, Yeongdeungpo-gu, Seoul 150-807 (KR).

Published:
— with international search report

[Continued on next page]

(54) Title: FLAT PLATE HEAT TRANSFER DEVICE



(57) Abstract: Disclosed is a flat plate heat transfer device, which includes a thermally conductive flat case installed between a heat source and a heat emitting unit and containing a working fluid evaporated with absorbing heat from the heat source and condensed with emitting heat to the heat emitting unit; and a mesh layer aggregate installed in the flat case and having a structure that a fine mesh layer for providing a flowing path of liquid and a coarse mesh layer for providing a flowing path of liquid and a dispersion path of vapor simultaneously are laminated. On occasions, the coarse and the fine mesh layers are alternately laminated repeatedly, and the fine mesh layer is replaced with a wick structure. The coarse mesh layer is preferably a screen mesh layer with wire diameter of 0.2 mm ~ 0.4 mm and mesh number of 10 ~ 20. This device improves heat transfer performance.

WO 2005/053371 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.